

WHAT IS CLAIMED IS:

1 1. A computer-implemented method that simulates the movement of motor vehicle,
2 and bicycle traffic in an environment, the method comprising:
3 scanning all traffic signals in the environment over a predetermined time interval;
4 updating parking activity, and motor vehicle and bicycle movement in the
5 environment;
6 checking whether any parking activity was generated for the predetermined time
7 period; and
8 simulating motor vehicle and bicycle movement in the environment using
9 predetermined acceleration and deceleration rates, a motor vehicle and bicycle following model,
10 and a lane changing model.

1 2. A computer-implemented method as recited in claim 1, further comprising:
2 updating pedestrian movement in the environment; and
3 simulating pedestrian movement in the environment.

1 3. A computer-implemented method as recited in claim 2, further comprising:
2 scanning parking activity, pedestrian movement, and motor vehicle and bicycle
3 movement in the environment prior to updating parking activity, pedestrian movement, and
4 motor vehicle and bicycle movement in the environment

1 4. A computer-implemented method as recited in claim 2, further comprising:
2 reacting to a situation selected from the group consisting of pedestrians on

3 crossings, parked motor vehicles, bus stops, and traffic signals or signs.

1 5. A system for simulating the movement of motor vehicle and bicycle traffic in an
2 environment, the system comprising:

3 a memory configured to store instructions; and

4 a processor configured to execute instructions for:

5 scanning all traffic signals in the environment over a predetermined time
6 interval,

7 updating parking activity, and motor vehicle and bicycle movement in the
8 environment,

9 checking whether any parking activity was generated for the
10 predetermined time period, and

11 simulating motor vehicle and bicycle movement in the environment using
12 predetermined acceleration and deceleration rates, a motor vehicle and bicycle
13 following model, and a lane changing model.

1 6. A system as recited in claim 5, wherein the processor is configured to execute the
2 further instructions for:

3 updating pedestrian movement in the environment; and

4 simulating pedestrian movement in the environment.

1 7. A system as recited in claim 6, wherein the processor is configured to execute the
2 further instructions for:

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4 scanning parking activity, pedestrian movement, and motor vehicle and bicycle
5 movement in the environment prior to updating parking activity, pedestrian movement, and
6 motor vehicle and bicycle movement in the environment

1 8. A system as recited in claim 6, wherein the processor is configured to execute the
2 further instructions for:

3 reacting to a situation selected from the group consisting of pedestrians on
4 crossings, parked motor vehicles, bus stops, and traffic signals or signs.

1 9. A computer readable medium that stores instructions executable by at least one
2 processor to perform a method for simulating the movement of motor vehicle and bicycle traffic
3 in an environment, comprising:

4 instructions for scanning all traffic signals in the environment over a
5 predetermined time interval;

6 instructions for updating parking activity, and motor vehicle and bicycle
7 movement in the environment;

8 instructions for checking whether any parking activity was generated for the
9 predetermined time period; and

10 instructions for simulating motor vehicle and bicycle movement in the
11 environment using predetermined acceleration and deceleration rates, a motor vehicle and
12 bicycle following model, and a lane changing model.

1 10. A computer readable medium as recited in claim 9, further comprising:
2 instructions for updating pedestrian movement in the environment; and
3 instructions for simulating pedestrian movement in the environment.

1 11. A computer readable medium as recited in claim 10, further comprising:
2 instructions for scanning parking activity, pedestrian movement, and motor
3 vehicle and bicycle movement in the environment prior to updating parking activity, pedestrian
4 movement, and motor vehicle and bicycle movement in the environment

1 12. A computer readable medium as recited in claim 9, further comprising:
2 instructions for reacting to a situation selected from the group consisting of
3 pedestrians on crossings, parked motor vehicles, bus stops, and traffic signals or signs.